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7590 05/10/2005

Attention: Eric D. Levinson  
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EXAMINER

SHINGLES, KRISTIE D

ART UNIT PAPER NUMBER

2141

DATE MAILED: 05/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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## Office Action Summary

Application No.

09/808,313

Applicant(s)

MONDAY, PAUL R.

Examiner

Kristie Shingles

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 25 October 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-8, 10-19, 21-31, 33-39 and 41 is/are pending in the application.
- 4a) Of the above claim(s) 9, 20, 32 and 40 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8, 10-19, 21-31, 33-39 and 41 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 October 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Amendment***

*Applicant has amended claims 1, 11, 12, 23, 34 and 39 and canceled claims 9, 20, 32 and 40.  
Claims 1-8, 10-19, 21-31, 33-39 and 41 are still pending.*

### ***Drawings***

1. The proposed drawing corrections filed 10/25/2004 have been accepted by the Examiner. The corrections to the drawings will not be held in abeyance.

### ***Claim Objections***

2. Per claim 11, the proposed typographic correction filed 10/25/2004 has been accepted by the Examiner. Correction of the claim language will not be held in abeyance.

### ***Response to Arguments***

3. Applicant's arguments with respect to claims 1-41 have been considered but are moot in view of the new ground(s) of rejection.

### ***Claim Rejections - 35 USC § 112, second paragraph***

4. Claim 39 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The term "substantial" in claim 39 is a relative term, which renders the claim indefinite. The term "substantial" is not defined by the claim, the specification does not provide

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a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. Clarification and/or correction are required.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-3, 5-8, 10-14, 16-19, 21-25, 27-30, 33-35, 37, 39 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Paul* (USPN 6,687,817) in view of *Kusters et al* (USPN 6,681,310).

a. **Per claims 1, 12 and 39** (differs only in statutory class), *Paul* teaches a method comprising:

- receiving a multicast message from a remote storage device (col.2 lines 33-45, col.3 line 47-col.4 line 37 and col.5 lines 39-49; receipt of multicasting message from new attached device); and
- detecting the attachment of the remote storage device to a network in response to receiving the multicast message (col.3 lines 19-46 and col.5 line 39-col.6 line 45; detection of new device and response to multicast message).

*Paul* teaches automatic configuration of the new device or a NAS into the network (col.4 line 3-col.5 line 3 and col.5 lines 39-67). Yet *Paul* fails to distinctly teach automatically incorporating storage capacity of the remote storage device into a logical storage volume. However *Kusters et al* disclose the integration of new storage devices added to the

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storage network (col.7 lines 14-52 and col.8 lines 5-18). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of *Paul* and *Kusters et al* for the purpose of incorporating the storage services of storage devices remotely attached to the network; because it would permit the extension of the storage network by permitting the addition of remote storage devices and the expansion of the storage resources in the network.

b. **Claims 23 and 34** contain limitations that are substantially similar to claims 1, 12 and 39 and are therefore rejected under the same basis.

c. **Per claims 2, 13, 24 and 41**, *Kusters et al* teach the method of claim 1, wherein incorporating the storage capacity comprises incorporating the storage capacity into an existing logical volume (col.7 lines 33-41 and col.11 lines 10-37).

d. **Per claims 3, 14 and 25**, *Kusters et al* teach the method of claim 1, wherein incorporating the storage capacity comprises incorporating the storage capacity into a new logical volume (col.7 lines 33-41, col.8 lines 5-41 and col.11 lines 10-37).

e. **Per claims 5, 16 and 27**, *Kusters et al* teach the method of claim 1, wherein incorporating the storage capacity comprises incorporating the storage capacity according to one or more pre-defined policies (col.7 line 14-col.8 line 55).

f. **Per claims 6, 17 and 28**, *Kusters et al* teach the method of claim 5, wherein incorporating the storage capacity comprises: forming a network-based connection with the remote storage device; creating a physical volume for the remote storage device; and adding the physical volume to a volume group (col.5 line 64-col.6 line 65 and col.7 lines 14-66).

g. **Per claims 7, 18 and 29**, *Kusters et al* teach the method of claim 5, further comprising selecting the volume group from a number of volume groups based on one of the pre-defined policies (col.7 lines 14-66, col.8 lines 56-65 and col.9 line 1-col.10 line 10).

h. **Claim 37** is substantially similar to claims 5 and 7 and is therefore rejected under the same basis.

i. **Per claims 8, 19 and 30**, *Paul* teaches the method of claim 1, wherein detecting the attachment of the remote storage device comprises intercepting a request from the remote storage device for an Internet Protocol (IP) address (col.3 lines 12-46).

j. **Per claims 10 and 21**, *Paul* teaches the method of claim 1, wherein incorporating the storage capacity comprises automatically controlling a logical volume manager (LVM) in response to the detected remote storage device (col.4 line 3-col.5 line 67).

k. **Per claims 11, 22 and 33**, *Paul* teaches the method of claim 10, wherein automatically controlling the LVM comprises: instantiating a network driver to form a network-based connection with the remote storage device; directing the LVM to create a physical volume for the remote storage device as if the remote storage device were local to the LVM; and directing the LVM to add the physical volume to a volume group (col.5 line 39-col.6 line 45).

l. **Per claim 35**, *Kusters et al* teaches the system of claim 34 further comprising a client computer coupled to the NAS master via a second network and configured to access the logical storage volume (col.5 line 64-col.6 line 13, col.7 lines 2-66, col.8 lines 56-65 and col.9 line 1-col.10 line 10).

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7. Claims **4, 15, 26 and 36** are rejected under 35 U.S.C. 103(a) as being unpatentable over *Paul* and *Kusters et al* in view of *Stallmo et al* (USPN 5,875,456).

a. Per claims **4, 15 and 26**, *Paul* and *Kusters et al* teach the method and limitations of claims 1, 12 and 23 as applied above, yet fail to distinctly teach the method of claim 1, further comprising automatically expanding a size of a storage space provided by a file system to include the storage capacity. However *Stallmo et al* disclose the incorporation and immediate capacity availability and extension of new disk storage that is added to the managed set of disks (col.8 lines 59-67, col.9 lines 47-60, col.10 lines 30-39, col.16 lines 1-17 and col.17 line 25-col.18 line 65).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of *Paul*, *Kusters et al* and *Stallmo et al* for the purpose of incorporating the new storage capacity into the existing storage system thus increasing and expanding the size of the storage; because it would permit immediate use of the new storage and extend the storage capabilities of the system with each newly added storage disk or device.

b. Claim **36** is substantially similar to claims 4, 15 and 26 and is therefore rejected under the same basis.

8. Claims **31 and 38** are rejected under 35 U.S.C. 103(a) as being unpatentable over *Paul* and *Kusters et al* in view of *Wang et al* (USPN 6,826,613).

a. Per claim **31**, *Paul* and *Kusters et al* teach the system of claim 23 as applied above, yet fail to explicitly teach the system wherein the computer is configured to maintain a

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pool of IP addresses and conform to the Dynamic Host Configuration Protocol (DHCP), and further wherein the NAS sensing module is configured to intercept a request from the remote storage device for an IP address. However, *Wang et al* disclose conformity to the DHCP and maintenance of the IP address for virtual addressing the storage devices (col.1 lines 15-58, col.4 line 39-col.5 line17, col.8 lines 9-62, col.14 line 66-col.15 line 4 and col.20 line 35-col.22 line 37).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of *Paul, Kusters et al* and *Wang et al* for the purpose of assigning dynamic IP addresses to the added storage devices on the network; because it would simplify network administration duties because the software would maintain and keep track of IP addresses rather than requiring an administrator to manage the task. Thus new devices can be added to a network without the hassle of manually assigning it a unique IP address.

b. **Claim 38** is substantially similar to claim 31 and is therefore rejected under the same basis.

### *Conclusion*

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a. Blumenau (USPN 6,502,162) discloses configuring vectors of logical storage units for data storage partitioning and sharing.
- b. Lee et al (USPN 6,601,101) disclose transparent access to network attached devices.
- c. Padovano (USPN 6,606,690) discloses a system and method for access a storage area network as network attached storage.



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- d. Hemphill et al (USPN 6,490,617) disclose active self-discovery of devices that participate in a network.
- e. Weisshaar et al (USPN 6,757,262) disclose service framework supporting remote service discovery and connection.
- f. St. Pierre (USPN 6,853,841) discloses a protocol for a remote control device to enable control of network attached devices.

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kristie Shingles whose telephone number is 571-272-3888. The examiner can normally be reached on Monday-Friday 8:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rupal Dharia can be reached on 571-272-3880. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*Kristie Shingles*  
*Examiner*  
*Art Unit 2141*

*kds*

  
RUPAL DHARIA  
SUPERVISORY PATENT EXAMINER